

“Cloud Computing- Concerns & Issues”

Abstract: Cloud computing is a concept which lets the user have their data over the internet in cost effective, convenient and flexible way. Its purpose is to provide its user a convenient storage space. The concept of cloud computing has become under spotlight and has promising future if only the issues can be tackled through special consideration.

The final project will focus on issues regarding cloud computing even though it's convenient, flexible and also cost-effective but it has major threat of security as well. Even though with all the hype and emerging trend of cloud computing it has a major question mark on the security concerns which people have and those concerns make people resist cloud computing. The major issues regarding security are privacy and uncertainty among the users. This concept is new and revolutionary change in the IT industry but still people are very cautious when it comes to using it. This paper will highlight the threats, challenges and issues regarding cloud computing and how to improve those areas to make this concept an emerging one among the users. The aim of this paper would be to come out with the possible suggestions on how to increase the effective consumption of cloud computing. This paper will look into networking, storage, virtualization, which are biggest security concerns of cloud computing.



Introduction to Cloud Computing:

The concept of cloud computing has gained lots of popularity within the last few years. But the risks and concerns are still debatable. When you save your photos online instead of saving the on the computer available at home, or you use mail or a social networking website, you use service of “cloud computing”. Cloud computing is delivery of computing resources over internet. People instead of keeping the data on their hard drives use mobile computing to save the data on internet. Doing this gives birth to privacy issues.

Cloud computing is the delivery of computing services over the Internet. Cloud services allow individuals and businesses to use software and hardware that are managed by third parties at remote locations. Examples of cloud services include:

- Online file storage,
- Social networking sites,
- Webmail, and
- Online business applications.

Cloud computing model allows access to information and computer resources from anywhere that a network connection is available. Cloud computing provides a shared pool of resources, including data storage space, networks, computer processing power, and specialized corporate and user applications.

Characteristics of Cloud Computing:

The characteristics of cloud computing includes:

- On-demand self service,
- broad network access,
- resource pooling,
- rapid elasticity and
- Measured service.

On -demand self service signifies that clients mostly organizations can request and manage their own computing resources. Broad network access allows services to be offered over the Internet or private networks. Pooled resources means that customers draw from a pool of computing resources, usually in remote data centres. Services can be scaled larger or smaller; and use of a service is measured and customers are billed accordingly.

The cloud computing service model is a Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS). In SaaS, a pre-made application, along with any required software, operating system, hardware, and network are provided. In PaaS, an operating system, hardware, and network are provided, and the customer installs or develops its own software and applications. The IaaS model provides just the hardware and network; the customer installs or develops its own operating systems, software and applications.

Uses of cloud computing:

Cloud services are typically made available via a private cloud, community cloud, public cloud or hybrid cloud. Services provided by a public cloud are available over the Internet and are owned and operated by a cloud provider. Some of the examples are like services aimed towards the general public, such as:

- Online photo storage services,
- E-mail services,
- Or social networking sites.

However, services for enterprises can also be offered in a public cloud.

Private cloud:

In private cloud the cloud infrastructure is handled for only a specific organization, and that is managed mostly by the organization itself or third party.

Community cloud:

here the service is shared by many organizations and is available to the ones who are part of the group. The infrastructure may be owned and operated by the organizations or by a cloud service provider

Hybrid cloud:

It is a combination of different technique of resource pooling i.e. combining community and public clouds.

A cloud service is popular because of low cost, and is easy to use. Since cloud users do not have to invest in information technology infrastructure, purchase hardware, or buy software licenses, the benefits are low up- front costs, rapid return on investment, rapid deployment, customization, flexible use, and solutions that can make use of new innovations. In addition, cloud providers that have specialized in a particular area (such as e-mail) can bring advanced services that a single company might not be able to afford or develop. Some other benefits to users include scalability, reliability, and efficiency. Scalability means that cloud computing offers unlimited processing and storage capacity. The cloud is reliable in that it enables access to applications and documents anywhere in the world via the Internet. Cloud

computing is often considered efficient because it allows organizations to free up resources to focus on innovation and product development.

Another potential benefit is that personal information may be better protected in the cloud. Specifically, cloud computing may improve efforts to build privacy protection into technology from the start and the use of better security mechanisms. Cloud computing will enable more flexible IT acquisition and improvements, which may permit adjustments to procedures based on the sensitivity of the data. Widespread use of the cloud may also encourage open standards for cloud computing that will establish baseline data security features common across different services and providers. Cloud computing may also allow for better audit trails. In addition, information in the cloud is not as easily lost (when compared to the paper documents or hard drives, for example).

Risks:

Potential privacy risks While there are benefits, there are privacy and security concerns too. Data is travelling over the Internet and is stored in remote locations. In addition, cloud providers often serve multiple customers simultaneously. All of this may raise the scale of exposure to possible breaches, both accidental and deliberate. Concerns have been raised by many that cloud computing may lead to “function creep” —uses of data by cloud providers that were not anticipated when the information was originally collected and for which consent has typically not been obtained. Given how inexpensive it is to keep data, there is little incentive to remove the information from the cloud and more reasons to find other things to do with it.

Security issues, the need to segregate data when dealing with providers that serve multiple customers, potential secondary uses of the data— these are areas that organizations should keep in mind when considering a cloud provider and when negotiating contracts or reviewing terms of service with a cloud provider. Given that the organization transferring this information to the provider is ultimately accountable for its protection, it needs to ensure that the personal information is appropriately handled.

Conclusion:

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Cloud computing offers many advantages for organizations and individuals. With advantages there are also privacy and security concerns. Along with using cloud computing service one must think about how the personal information of the clients can be protected. And for the customers they should evaluate the terms and conditions of the contracts, and challenge the manufacturers to satisfy their needs.